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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CHRISTIE, PARKER & HALE, LLP
350 WEST COLORADO BOULEVARD
SUITE 500
PASADENA, CA 91105

EXAMINER	
MILORD, MARCEAU	
ART UNIT	**PAPER NUMBER**
2682	6

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/692,508	WU ET AL.	
	Examiner	Art Unit	
	Marceau Milord	2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-103* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-103* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 October 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narumi et al (US Patent No 6118811) in view of Ciccarelli et al (US Patent No 6175279 B1).

Regarding claims 1, 11, 15, Narumi et al discloses a calibration circuit (figs.1-3, 5), comprising: a first component (150 of fig. 1); a digitally tunable second component (50 of fig. 1); a current coupled to the first component to generate a first parameter of the first component, and coupled to the second component to generate a second parameter of the second component (col. 1, line 65- col. 2, line 10; col. 5, lines 17-59); and a logic control (130 and 60 of fig. 1) block to digitally tune the second component as a function of the first and second parameters (col. 3, line 46- col. 4, line 21; col. 6, lines 9-67).

However, Narumi et al does not specifically disclose the feature of a current source coupled to the first component to generate a first parameter of the first component.

On the other hand, Ciccarelli et al, from the same field of endeavor, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with

active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claim 2, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5) wherein the current source provides a first current to the first component and a second current to the second component (col. 3, lines 28-42; col. 5, lines 31-47).

Regarding claim 3, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5) wherein the first current is substantially equal to the second current (col. 4, lines 1-32).

Regarding claim 4, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5) wherein the current source comprises a current mirror having a first output coupled to the first component and a second output coupled to the second component (col. 3, lines 24-45; col. 5, lines 30-55).

Regarding claim 5, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5) wherein the first parameter comprises a first voltage and the second parameter comprises a second voltage (col. 5, lines 31-43; col. 6, lines 9-32; col. 6, lines 55-67).

Regarding claim 6, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5) wherein the logic control block comprises a comparator to compare the first and second voltages, and control logic to digitally tune the second component as a function of the voltage comparison (col. 6, lines 22-61).

Regarding claims 7-10, 12-14, 16, Narumi et al as applied to claim 1 above differs from claims 7-10, 12-14, 16-17 in that Narumi fails to disclose the features of the first component comprises a resistor, the second component comprises a second resistor; and the second resistor comprises a tunable resistor array.

However, Ciccarelli et al, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Claim 17 contains similar limitations addressed in claim 1, and therefore is rejected under a similar rationale.

Regarding claims 18-19, 30, 35, Narumi et al discloses a calibration circuit (figs.1-3, 5), comprising: a first component (150 of fig. 1); a digitally tunable second component (50 of fig. 1); and a second parameter of the second component (col. 1, line 65- col. 2, line 10; col. 5, lines 17-59); and tuning means (130 and 60 of fig. 1) for digitally tuning the second component as a function of the first and second parameters (col. 3, line 46- col. 4, line 21; col. 6, lines 9-67).

However, Narumi et al does not specifically disclose the feature of a generating means wherein the generating means comprises a current source for generating a first parameter of the first component.

On the other hand, Ciccarelli et al, from the same field of endeavor, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of

Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claim 20, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5), wherein the current source provides a first current to the first component and a second current to the second component (col. 3, lines 28-42; col. 5, lines 31-47).

Regarding claim 21, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5), wherein the first current is substantially equal to the second current (col. 4, lines 1-32).

Regarding claim 22, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5), wherein the current source comprises a current mirror having a first output coupled to the first component and a second output coupled to the second component (col. 3, lines 24-45; col. 5, lines 30-55).

Regarding claim 23, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5), wherein the first parameter comprises a first voltage and the second parameter comprises a second voltage (col. 5, lines 31-43; col. 6, lines 9-32; col. 6, lines 55-67).

Regarding claim 24, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5), wherein the tuning means comprises a comparator to compare the first and second voltages, and control logic to digitally tune the second component as a function of the voltage comparison (col. 6, lines 22-61).

Regarding claims 25-29, 31-34, 36-37, Narumi et al as applied to claim 18 above differs from claims 25-29, 31-34, 36-37 in that Narumi fails to disclose the features of the first component comprises a resistor, the second component comprises a second resistor; and the second resistor comprises a tunable resistor array.

However, Ciccarelli et al, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claim 38, Narumi et al discloses a calibration circuit (figs.1-3, 5), comprising: a first component (150 of fig. 1); a digitally tunable second component (50 of fig. 1); coupled to the current through a second node (col. 1, line 65- col. 2, line 10; col. 5, lines 17-59); a comparator having an input coupled to the first and second nodes, and an output; and control logic (130 and 60 of fig. 1) coupled between the output of the comparator and the second component (col. 3, line 46- col. 4, line 21; col. 6, lines 9-67).

However, Narumi et al does not specifically disclose the feature of a current source; a first component coupled to the current source through a first node

On the other hand, Ciccarelli et al, from the same field of endeavor, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claim 39, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5), wherein the current source provides a first current to the first component and a second current to the second component, the first and second currents being substantially equal (col. 4, lines 1-32).

Regarding claim 40, Narumi et al as modified discloses a calibration circuit (figs.1-3, 5), wherein the current source comprises a current mirror having a first output coupled to the first component and a second output coupled to the second component (col. 3, lines 28-42; col. 5, lines 31-47).

Regarding claims 41-49, Narumi et al as applied to claim 38 above differs from claims 41-49 in that Narumi fails to disclose the features of the first component comprises a resistor, the

second component comprises a second resistor; and the second resistor comprises a tunable resistor array.

However, Ciccarelli et al, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claims 50, 60, 68, Narumi et al discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) comprising a first component (150 of fig. 1), a digitally tunable second component (50 of fig. 1), a current coupled to the first component to generate a first parameter of the first component and coupled to the second component to generate a second parameter of the second component (col. 1, line 65- col. 2, line 10; col. 5, lines 17-59), and a logic control block (130 and 60 of fig. 1) having a control output to digitally tune the second component as a function of the first and second parameters; and a digitally tunable transceiver

component tuned by the control output of the logic control block (col. 3, line 46- col. 4, line 21; col. 6, lines 9-67).

However, Narumi et al does not specifically disclose the feature of a current source coupled to the first component to generate a first parameter of the first component.

On the other hand, Ciccarelli et al, from the same field of endeavor, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption

Regarding claim 51, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the current source provides a first current to the first component and a second current to the second component (col. 3, lines 28-42; col. 5, lines 31-47).

Regarding claim 52, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the first current is substantially equal to the second current (col. 4, lines 1-32).

Regarding claim 53, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the current source comprises a current mirror having a first output coupled to the first component and a second output coupled to the second component (col. 3, lines 24-45; col. 5, lines 30-55).

Regarding claim 54, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the first parameter comprises a first voltage and the second parameter comprises a second voltage (col. 3, lines 24-45; col. 5, lines 30-55).

Regarding claim 55, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the logic control block comprises a comparator to compare the first and second voltages, and control logic comprising the control output to digitally tune the second component as a function of the voltage comparison (col. 6, lines 22-61).

Regarding claims 56-59, 61-67, 69-74, Narumi et al as applied to claim 50 above differs from claims 56-59, 61-67, 68-74 in that Narumi fails to disclose the features of the first component comprises a resistor, the second component comprises a second resistor; and the second resistor comprises a tunable resistor array.

However, Ciccarelli et al, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based

on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claims 75, 85, Narumi et al discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) comprising a first component (150 of fig. 1), a digitally tunable second component (50 of fig. 1), a current coupled to the first component to generate a first parameter of the first component and coupled to the second component to generate a second parameter of the second component (col. 1, line 65- col. 2, line 10; col. 5, lines 17-59), and a logic control block (130 and 60 of fig. 1) having a control output to digitally tune the second component as a function of the first and second parameters(col. 3, line 46- col. 4, line 21; col. 6, lines 9-67).

However, Narumi et al does not specifically disclose the feature of a current source coupled to the first component to generate a first parameter of the first component; and bandgag calibration circuit to generate a bandgag current substantially independent of temperature, the bandgap calibration circuit being responsive to the control output from the logic control block.

On the other hand, Ciccarelli et al, from the same field of endeavor, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claim 76, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the current source provides a first current to the first component and a second current to the second component (col. 3, lines 28-42; col. 5, lines 31-47).

Regarding claim 77, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the first current is substantially equal to the second current (col. 4, lines 1-32).

Regarding claim 78, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the current source comprises a current mirror having a

first output coupled to the first component and a second output coupled to the second component (col. 3, lines 28-42; col. 5, lines 31-47).

Regarding claim 79, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the first parameter comprises a first voltage and the second parameter comprises a second voltage (col. 5, lines 31-43; col. 6, lines 9-32; col. 6, lines 55-67).

Regarding claim 80, Narumi et al as modified discloses a transceiver (fig. 1), comprising: a calibration circuit (figs. 2-4) wherein the logic control block comprises a comparator to compare the first and second voltages, and control logic comprising the control output to digitally tune the second component as a function of the voltage comparison (col. 6, lines 22-61).

Regarding claims 81-84, 86-87, Narumi et al as applied to claim 75 above differs from claims 81-84, 86-87 in that Narumi fails to disclose the features of the first component comprises a resistor, the second component comprises a second resistor; and the second resistor comprises a tunable resistor array.

However, Ciccarelli et al, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other

end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claims 88, 94-99, Narumi et al discloses a method of calibration (figs.1-3, 5), comprising: providing a current to a second component to generate a second parameter (col. 1, line 65- col. 2, line 10; col. 5, lines 17-59); and digitally tuning the second component as a function of the first and second parameters (col. 3, line 46- col. 4, line 21; col. 6, lines 9-67).

However, Narumi et al does not specifically disclose the step of providing a first current to a first component to generate a first parameter.

On the other hand, Ciccarelli et al, from the same field of endeavor, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of

Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Regarding claim 89, Narumi et al as modified discloses a method of calibration (figs.1-3, 5), wherein the first current is substantially equal to the second current (col. 4, lines 1-32).

Regarding claim 90, Narumi et al as modified discloses a method of calibration, (figs.1-3, 5), comprising generating a reference current, and mirroring the first and second currents to the reference current (col. 3, lines 24-45; col. 5, lines 30-55).

Regarding claims 91-93, 100-103, Narumi et al as applied to claim 88 above differs from claims 91-93, 100-103 in that Narumi fails to disclose the features of the second component comprises a plurality of resistors coupled in series, and the digital tuning of the second component comprises selectively bypassing at least one of the resistors; the second component comprises a plurality of capacitors coupled in a parallel array, and the digital tuning of the second component comprises selectively switching at least one of the capacitors in or out of the array.

However, Ciccarelli et al, discloses an amplifier having an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption. A current source is then designed to provide adjustable bias current for the amplifier. The current source can also be designed with active devices, which are selected based on the logic of the control signals for ease of interface (col. 4, line 34- col. 5, line 13). Furthermore, Ciccarelli shows in figure 5A, a capacitor 1514 that connects to analog ground and the other end of inductor 1516 that connects to one end of resistors 1518 and 1520 and the base of transistor 1540. The other end of resistor 1518 connects to the power supply Vdc and the other

end of resistor 1520 connects to analog ground (col. 9, lines 25-65; col. 10, lines 8-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Ciccarelli to the system of Narumi in order to have an adjustable current source, which can be controlled to provide the requisite level of performance at reduced current consumption.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lundberg et al US Patent No 5881376 discloses a method and a system for calibrating transceivers.

Yu-Hong US Patent No 6118984 discloses a dual conversion RF transceiver that uses only one local oscillator for signal conversion to simplify complexity and reduce production cost.

Sirna et al US Patent No 6100759 discloses a low noise integrated AC amplifier, which includes cascade differential input stage comprising first and second branches.

Devlin et al US Patent No 5930686 discloses an integrated transceiver circuit packaged component including a transceiver circuit having a band stop filter.

Tham et al US Patent No 6049702 discloses an integrated passive transceiver section.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 703-306-3023. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 703-308-6739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

MARCEAU MILORD

Marceau Milord
Examiner
Art Unit 2682